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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,033	06/06/2005	Wei Monin	259933US2PCT	6253
22850 7590 06/27/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER KIM, EUNHEE				
ART UNIT 2123		PAPER NUMBER		
NOTIFICATION DATE 06/27/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary**Application No.**

10/511,033

Applicant(s)

MONIN ET AL.

Examiner

Eunhee Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 03/03/2008 has been received and considered. Claims 11-20 are presented for examination.

Specification

2. The amendment filed 03/03/2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: a resource specification quantifying resources available from physical hardware of the system.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

3. Claims 11, 15, and 18 are objected to because of the following informalities:

As per claim 11, the phrase “the execution flows” in line 9 would be better as “execution flows” or “the execution flow” to avoid any possible antecedent issues.

As per claim 15, the phrase “the execution flows” in line 2 would be better as “the execution flow” and “the request groups” would be better as “the request group” or “requested groups” to avoid any possible antecedent issues.

As per claim 18, the phrase “the execution flows” in lines 18 would be better as “the execution flow” to avoid any possible antecedent issues.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, claim 11 does not enable one of ordinary skill in the art to make and use the invention because it does not adequately disclose how a resource specification quantifies resources available from physical hardware of the system. Applicants have argued that “Support for changes to Claim 11 is found in the specification at least on page 30, lines 9-24, and Figures 7 and 12-15.” However, nowhere in the specification where physical hardware is disclosed including [0055], [0067], and [0113] discloses how a resource specification quantifies resources available from physical hardware of the system.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 11-17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by El-Sayed et al. (Automated Performance Modeling from Scenarios and SDL designs of Distributed Systems).

El-Sayed et al. discloses (Claim 11) a process for generating a performance model from a functional model for a system (Abstract) including a plurality of distributed hardware (Fig. 1, Configuration Information) and software entities (Fig. 1 Scenario) that engage to provide a service to at least one user (Fig. 1), the process comprising:

distributing representative system requests in a finite number of groups and identifying (Fig. 2, Chapter 2), for each request group, a corresponding execution flow, the distributing of the requests being determined by a service being called upon and by characteristics of customer specific behavior (Fig. 2, Chapter 2), and the execution flow for each request group corresponding to a software entity execution linking, in sequence and/or in parallel, induced by a group request (Fig. 1-3, Second column of the page 128, Chapters 2 and 3);

formalizing the execution flows using a notation identifying causal relationships between different software entities of the system that are involved in the execution flows, the notation including resource consumption metrics, attributing specific resource consumption values in correspondence to a respective execution flow (Fig. 1-5, Chapter 3);

developing an intermediate model that comprises, in addition to the formalized execution flows, a resource specification that specifies physical hardware of the system, and an environment specification that quantifying the amount of requests generated by said at least user (Fig. 1-5, Chapter 3-4); and

automating conversion of the developed intermediate model into a performance model (Fig. 6, Chapter 5);

(Claim 12) wherein the performance model derived from the developed intermediate model is dedicated to pre-existing software simulators using queuing network techniques (Fig. 1, Chapter 3);

(Claim 13) wherein the distributing the requests in a finite number of request groups is determined by the service being called upon, and by characteristics of the customer specific behavior that affect a way in which the service being called upon is delivered (Fig. 4-6, Chapter 3);

(Claim 14) wherein the execution flow for each request group is determined by the software entity execution linking, in sequence and/or in parallel, induced by a group request (Fig. 4-6, Chapter 3);

(Claim 15) wherein topology of a queuing model derived from the conversion is wholly determined by the execution flows corresponding to the request groups (Fig. 4-5, Chapter 3);

(Claim 16) wherein derivation of a performance model dedicated to a pre-existing simulator based on queuing network techniques can be automated by adapting correspondence rules proposed (Fig. 4-5, Chapter 3-4);

(Claim 17) wherein formalism of phases is achieved using an extension of a MSC (Message Sequence Charts) formalism (Chapter 2); and

(Claim 20) wherein the intermediate model developed comprises the formalized execution flows characterizing the behavior of software entities and their interactions, at least

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one resource specification specifying the physical hardware, and at least one environment specification representing user behavior (Chapter 3, Second Column of page 129).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over by El-Sayed et al. (Automated Performance Modeling from Scenarios and SDL designs of Distributed Systems), in view of Alur et al. (US Patent No. 6,324,496).

El-Sayed et al. teaches most all of the instant invention as applied to claims 11-17 and 20 above.

El-Sayed et al. teaches (Claim 18) wherein the formalism of a graph of phases and execution flows with a plurality of nodes representing phases constituting the service (Fig. 5-6, Chapter 3-4); and

at least one oriented arc leading from a first node to a second node representing linking in a two-phase sequence (Fig. 5-6, Chapter 3-4);

(Claim 19) at least one node followed by plural arcs oriented in parallel (Fig. 5-6, Second column of the page 128).

El-Sayed et al. fails to teach (Claim 18) HMSC (High level Message Sequence Charts) and (Claim 19) at least one node followed by plural arcs oriented as a function of choice of a following phase depending either on a condition external to the system, or on an internal condition related to a current status of the system.

Alur et al. teaches (Claim 18) HMSC (High level Message Sequence Charts) (Fig. 1-2, Col. 4 lines 24-67, Col. 5 lines 24-40); and

(Claim 19) at least one node followed by plural arcs oriented as a function of choice of a following phase depending either on a condition external to the system, or on an internal condition related to a current status of the system (Fig. 1-2, Col. 4 lines 24-67, Col. 5 lines 1-23).

El-Sayed et al. and Alur et al. are analogous art because they are both related to performance modeling.

Therefore, it would have been obvious to one of ordinary skill in the art of at the time the invention was made to include HMSC and the function of choice method of Alur et al., with the method of performance modeling of El-Sayed et al. because Alur et al. teaches advantages of model checking method with an efficient algorithm at a minimal price (Col. 14 lines 20-26).

Response to Arguments

12. Applicant's arguments filed 03/03/2008 have been fully considered but they are not persuasive.

Applicants have argued that:

Applicants submit that amended claim 1 recites a notation including resource consumption metrics attributing specific resource consumption values and correspondence to a respective execution flow. The consumption metrics are developed to reflect an environment specification quantifying the amount of requests generated by at least one user. In this way, a developed intermediate model may be automatically converted into a performance model such that the performance model includes notations identifying the resource consumption metrics in correspondence to a respective execution flow. Claim 11 is distinguishable over El-Sayed as the applied reference fails to disclose or suggest providing the claimed notation to an intermediate model. El-Sayed merely describes using a message sequence chart (MCE) that illustrates different processes, messages passed between the processes, and computational activities that each process executes. El-Sayed fails to describe execution flows which already incorporate at this stage of the system resource consumption due to these flows.

The examiner disagrees as El-Sayed teaches a notation including a resource consumption values and an intermediate model (LQN sub-models, Fig 1-6). For example, see the second column in page 129 for a resource consumption value:

An example of an LQN model is shown in Figure 4. In the figure, tasks are shown as parallelograms and requests from one task to another are made to service "entries", which are ports or addresses of particular services offered by a task. An entry executes activities with precedence relationships, and activities have resource demands and can make requests to other tasks. For each activity, a resource consumption value (for CPU consumption, storage operations, and any other operations of the task to carry out the execution step) must be made available from a repository of "resource functions" indicated in Figure 1. Resource functions are not considered in detail in this paper, but they are an important part of the information, and in this work they are assumed to be available from previous measurements, or estimated from experience. Requests for service can be made via three different kinds of interactions:

Thus, the examiner takes the position that El-Sayed teaches execution flows which already incorporate at this stage of the system resource consumption due to these flows as an LQN model are used to calculate the throughput of processing (Second column of pg 129). In addition, the examiner takes the position that El-Sayed teaches a message sequence chart (Fig. 2 and Pg 128).

Our designs are derived from scenarios, which are sequences of activities (actions) that specify the desired behavior of a software system. We will describe scenarios by Message Sequence Charts (MSCs) which specify how objects communicate with each other and with external actors during the scenario (8). Each object participating in a scenario is represented by a vertical line; an event is shown as a horizontal arc from the sender object to the receiver(s). Time flows from top to bottom.

Figure 2 shows an example, it shows three scenarios as MSCs. The first scenario, illustrated in Figure 2(a), represents a request-response interaction pattern between the environment (ENV) and process A. The second scenario depicts a chain of requests from ENV to process A then to process C. The third scenario describes a request-forward-reply interaction pattern between ENV, process B and process C.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a message sequence chart (MCE) that illustrates ... computational activities that each process executes.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations

from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eunhee Kim whose telephone number is 571-272-2164. The examiner can normally be reached on 8:30am-5:00pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eunhee Kim/
Examiner, Art Unit 2123

/Zoila E. Cabrera/
Primary Examiner, Art Unit 2123